In the Claims

Claims 1 - 26 (Cancelled)

27. (New) A device for measuring elasticity of a human or animal organ, or viscoelastic environments presenting an ultrasonic signal after ultrasonic illumination and consecutively establishing a representation in two or three dimensions of the elasticity, comprising:

at least one ultrasonic bar comprising a plurality of transducers,

an excitor that generates and delivers a low-frequency, direct or indirect applied force,

a receiver that acquires ultrasonic signals, a controller that commands and processes data, and

a scanner that carries out scanning with the bar in one dimension (1D) or in two dimensions (2D) in two perpendicular directions, respectively, to obtain a representation of the measure of the elasticity in two (2D) or three dimensions (3D).

28. (New) The device according to Claim 27, wherein the excitor generates a mechanical vibration that can be transversal, longitudinal or a mixture of both.

29. (New) The device according to Claim 27, wherein the excitor generates a remote palpation using pressure of radiation either with the transducer(s) used for acquiring ultrasonic signals or several transducers arranged around the viscoelastic environment.

30. (New) The device according to Claim 27, wherein the excitor generates internal movements of the human or animal body.

31. (New) The device according to Claim 27, wherein the excitor comprises one or several hyperthermal transducers, either with the transducer(s) used for acquiring ultrasonic signals or one or several transducers arranged around the viscoelastic environment.

32. (New) The device according to Claim 27, wherein the ultrasonic bar is a 1.5 D bar or a wye transducer that focuses at a plurality of different points of elevation and scanning is achieved by ultrasonic focalization.

33. (New) The device according to Claim 27, wherein a space between the ultrasonic bar and the viscoelastic environment is constituted at least in part of water or any other element capable of assuring free passage of ultrasonic waves.

34. (New) The device according to Claim 28, wherein the mechanical vibration is obtained by one or several vibrating plates, piston(s) and/or bar(s).

35. (New) The device according to Claim 27, wherein the receiver comprises ultrasonic transmitters and receivers, digital-to-analog (CNA) and analog-to digital (CAN) converters, memories and digital and analog transmission lines.

36. (New) The device according to Claim 35, wherein the ultrasonic transmitters and receivers are arranged in proximity to the ultrasonic bar at a distance less than 50 centimeters.

37. (New) The device according to Claim 35, wherein the digital-to-analog converters (CNA)and the analog-to-digital converters (CAN) are situated in proximity to the ultrasonic bar at a distance less than 50 centimeters.

38. (New) The device according to Claim 37, wherein the unit constituted of the ultrasonic transducers and their on-board electronic components is connected to the controller by a very high-speed digital connection.

39. (New) The device according to Claim 27, comprising two ultrasonic bars.

40. (New) The device according to Claim 27, comprising three bars suitable for measuring tissular speeds along directions y, x and z.

41. (New) The device according to Claim 39, wherein the two bars are immersed in a hermetic container filled with a liquid.

42. (New) The device according to Claim 41, wherein the hermetic container is connected to a rotator suitable for rotating the container.

43. (New) The device according to Claim 41, wherein the hermetic container comprises a plurality of orifices into which a mechanical vibrator and/or an ultrasonic transducer is/are introduced.

44. (New) The device according to Claim 41, wherein the orifices are situated at 90° (degrees) from each other or one from the other.

45. (New) A process for measuring elasticity of a human or animal organ, or viscoelastic environments presenting an ultrasonic signal after ultrasonic illumination and consecutively establishing a representation in two or three dimensions of the elasticity, comprising:

generating a low-frequency applied force or signal with an ultrasonic bar and acquiring ultrasonic signals,

displacing the bar with a scanner in two perpendicular directions,

generating ultrasonic images,

calculating tissular speeds, and

inverting the data by recovering parameters describing the viscoelastic environment.

46. (New) The process according to Claim 45, wherein the low-frequency applied force or signal has a frequency between 5 Hz and 1000 Hz.

47. (New) The process according to Claim 45, further comprising calculating tissular deformation speeds.

48. (New) The process according to Claim 45, further comprising measuring second derivatives of the longitudinal component of the deformation speed along three orthogonal directions in space during the calculation of the tissular speeds.

49. (New) The process according to Claim 45, wherein spatial derivatives of three components of the tissular speed along three directions in space are measured during calculation of the tissular speeds.

50. (New) The process according to Claim 45, wherein acquiring the ultrasonic signals takes place while emitting an impulse with an ultrasonic transducer(s) that is reflected by particles contained in the viscoelastic environment.

51. (New) The process according to Claim 45, wherein acquiring ultrasonic signals is realized at a cadence of 1/T between 100 Hz and 100,000 Hz, where T is a period between two ultrasonic emissions.

52. (New) The process according to Claim 50, wherein acquiring ultrasonic signals is realized at a cadence of 1/T between 100 Hz and 100,000 Hz, where T is a period between two ultrasonic emissions.

53. (New) The process according to Claim 45, wherein displacement of the bar is realized by mechanical scanning or an ultrasonic scanning in elevation.